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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,660	06/29/2001	Mutsumi Maeda	7419-028	7061

7590

11/21/2002

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EXAMINER

SELLERS, ROBERT E

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 11/21/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,660

Applicant(s)

MAEDA ET AL.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

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Claims 11 and 13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species of mixing means, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for formula (1) in claim 7, line 4 since claim 7 is an independent claim not dependent upon claim 1 which depicts formula (1). Formula (1) as represented in claim 1 should be inserted into independent claim 7.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7, 9, 10, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Sybert et al., Masuyama et al., Nakano, Brown et al., European Patent Nos. 546,497 and 451,563; Okabe et al. or Vianello et al.

Sybert et al. (col. 11, Example 12), Nakano (col. 4, lines 54-60 and col. 6, lines 32-40), Brown et al. (col. 5, lines 15-16 and 22-28), European '497 (page 5, lines 39-41 and page 14, Example 13), European '563 (page 7, Example 1), Okabe et al. (col. 4, lines 10-21 and 29-32) or Vianello et al. (col. 9, Example 1) sets forth a process for preparing a modified polyphenylene ether comprising reacting 100 parts by weight of the elected species of poly(2,6-dimethyl-1,4-phenylene)ether and an amount of maleic anhydride or glycidyl (meth)acrylate (Brown et al.) within the claimed limits at a temperature within the ranges of from 100°C to 230°C defined in claim 9 and from 150°C to 200°C denoted in claim 10.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sybert et al., Masuyama et al., Nakano, Brown et al., European Patent Nos. 546,497 and 451,563; Okabe et al. and Vianello et al.

The modified poly(2,6-dimethyl-1,4-phenylene)ether having the same structure as the elected species inherently possesses a melting point within the range of from 240°C to 260°C required in claim 8. The pelletized, melt-prepared modified polyphenylene ether or the precipitated, solution-prepared polyphenylene ether inherently attains a powder form as necessitated by claim 8.

The mixing of the maleic anhydride or glycidyl (meth)acrylate with the polyphenylene ether with the Henschel mixer of claim 12 is not recited. Sybert et al. (col. 11, line 35) and Okabe et al. (col. 9, line 22) employ a Henschel mixer as a means for blending the molten maleic anhydride and polyphenylene ether. It would have been obvious to utilize the Henschel mixer of Sybert et al. and Okabe et al. to melt-mix the maleic anhydride or glycidyl (meth)acrylate with the polyphenylene ether in order to optimize the reaction between the components.

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Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sybert et al., Masuyama et al., Nakano, Brown et al., European Patent Nos. 546,497 and 451,563; Okabe et al. and Vianello et al. in view of the Kobonshi Ronbunshu articles by Mitui et al. and Takayama et al.

The primary references are described hereinabove and use poly(2,6-dimethyl-1,4-phenylene)ether as the polyphenylene ether.

The level of rearrangement structures (i.e. Fries rearrangement according to page 4, lines 7-17 of the specification) of less than 0.01/100 polyphenylene ether units of formula (1) defined in claim 1 is not recited. Mitui et al. and Takayama et al. teach the lack of Fries-type rearrangement when poly(2,6-dimethyl-1,4-phenylene)ether is prepared by head-to-tail polymerization.

It would have been obvious to produce the poly(2,6-dimethyl-1,4-phenylene)ether of the primary references via the head-to-tail polymerization of Mitui et al. and Takayama et al. in order to obtain a homogeneous polyphenylene ether structure.

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11/15/02